WHAT IS CLAIMED IS:

1. An apparatus for electroplating a rotogravure cylinder out of a plating solution wherein the cylinder is connectable to a current source, the apparatus comprising:

a plating tank adapted to support the cylinder and to contain the plating solution so that the cylinder is at least partially disposed into the plating solution;

an anode system including at least one anode connectable to the current source and at least partially disposed within the plating solution, wherein the anode includes a conductive core, and a surface material substantially resilient to the plating solution, the surface material covering at least a portion of the conductive core; and

an ultrasonic system to introduce wave energy into the plating solution including at least one transducer element mountable within the plating tank and a power generator adapted to provide electrical energy to the at least one transducer element.

2. The apparatus of Claim 1 wherein the anode includes titanium.

3. The apparatus of Claim 1 wherein the surface material further comprises:

a titanium base; and

a conductive metal oxide coating.

4. The apparatus of Claim 3 wherein the conductive metal oxide coating includes at least one platinum-group metal or platinum-group metal oxide and at least one valve metal or valve metal oxide.

5. The apparatus of Claim 3 wherein the conductive metal oxide coating includes iridium or iridium oxide.

6. The apparatus of Claim 1 wherein the non-dissolvable conductor is disposed around each side of the cylinder.

7. The apparatus of Claim 1 wherein the conductive core is titanium, copper or lead.

8. The apparatus of Claim 1 wherein the plating solution includes cuprous oxide.

9. The apparatus of Claim 1 wherein the plating solution includes a hardener.

10. The apparatus of Claim 1 wherein the surface material includes platinum.

11. The apparatus of Claim 1 further comprising:

a holding tank;

a circulation pump providing flow of plating solution from the holding tank to the plating tank; and

a means for maintaining a level of plating solution in the plating tank.

12. The apparatus of Claim 11 wherein the holding tank further comprises a fluid heating system, a fluid cooling system, and a mixing system.

13. The apparatus of Claim 11 further comprising a filter system for filtering the plating solution flowing from the holding tank to the plating tank.

14. The apparatus of Claim 11 wherein the plating tank further comprises a surface material substantially resilient to the plating solution.

15. The apparatus of Claim 11 wherein the holding tank further comprises a surface material substantially resilient to the plating solution.

16. An apparatus for electroplating a rotogravure cylinder out of a plating solution wherein the cylinder is connectable to a current source, the apparatus comprising:

a plating tank adapted to rotatably maintain the cylinder and to contain the plating solution so that the cylinder is at least partially disposed into the plating solution; and

an anode at least partially disposed within the plating solution, wherein the anode includes a conductive core, a first layer including titanium securely applied to the conductive core, and a second layer including at least one platinum-group metal or platinum-group metal oxide and at least one valve metal or valve metal oxide, the second layer securely applied to the first layer.

17. The apparatus of Claim 16 further comprising an ultrasonic system to introduce wave energy into the plating solution including at least one transducer element mountable within the plating tank and a power generator adapted to provide electrical energy to the at least one transducer element.

18. The apparatus of Claim 16 wherein application of the first layer increases the surface area of the conductive core by greater than about 50 percent.

19. The apparatus of Claim 16 wherein the second surface material includes a mixture of iridium or iridium oxide and a valve metal or valve metal oxide.

20. An apparatus for electroplating a rotogravure cylinder out of a plating solution, wherein the cylinder is connectable to a current source, the apparatus comprising:

a plating tank adapted to rotatably maintain the cylinder and to contain the plating solution so that the cylinder is at least partially disposed into the plating solution;

an anode system including at least one anode partially disposed within the plating solution, the anode including a titanium core and a surface material including a mixture of iridium or iridium oxide and a valve metal or valve metal oxide; and

an ultrasonic system to introduce wave energy into the plating solution including at least one transducer element mountable within the plating tank to the mounting structure and a power generator adapted to provide electrical energy to the at least one transducer element.

21. The apparatus of Claim 20 wherein the surface material further includes a layer of titanium applied to the titanium core.